In response, independent claims 1 and 5 have been amended to recite a rectangular laser slab with polished side surfaces, which reflect laser pump light that is received from a multi-cylindrical lens arrangement. This configuration ensures a laser mode overlap throughout the entire length of the laser slab. Support for these amendments is found in the specification on page 5, lines 10-20, on page 6, lines 10-15 and in Figs. 1 and 2. Claims 2, 4 and 5 have further been amended to correct informalities. Claims 1-5 remain pending.

Rejections Under 35 U.S.C. §103(a)

With respect to the rejections of Claims 1 and 5 for being unpatentable over Fields et al. in view of Marchitto et al., Applicant respectfully disagrees with Examiner's initial premise that the Fields et al. references discloses a first cylindrical lens. Applicant asserts that, instead of a cylindrical lens, Fields et al. discloses a microlens array with a plurality of microlenses that are hyperbolic in profile, not cylindrical. Supporting documentation for this assertion can be found at col. 5, Lines 27-29, Col. 8, Lines 56-66 and especially Figs. 4b and 4d of the Fields et al. reference. The collimated beams from each hyperbolic microlens are then focused onto the input end of a laser crystal with a second macrolens. The lenses in the Fields et al. array are hyperbolic because the laser output from each diode bar must be collimated in both a vertical and a horizontal direction in order to focus the collimated laser beams onto as small a spot 32 in the input side of the crystal as is possible.

Conversely, Applicant's amended independent claims 1 and 5 recite a first cylindrical lens that collimates the input laser light in a vertical direction. The second cylindrical recited in amended independent claims 1 and 5 focuses the light into a rectangular laser slab. Moreover, and further unlike Fields et al., amended independent claims 1 and 5 recite a rectangular laser slab with polished side surfaces, for reflecting the received input laser pump light throughout the length of the laser slab. There is no

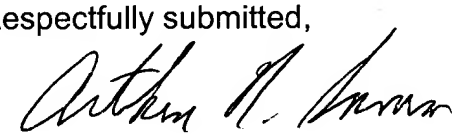
discussion in Fields et al. about polishing the side surfaces of the laser crystal. Thus, Fields et al. does not teach or suggest the present invention as recited by amended independent claims 1 and 5.

With respect to the Marchitto et al. reference, Marchitto et al. is merely directed at the measure of interstitial fluids. To do this, Marchitto et al. briefly describes a cylindrical laser rod 20 as part of a larger laser cavity. As such, the laser crystal rod in Marchitto et al. has polished ends, but no polished side surfaces. Therefore, combining the Marchitto et al. reference with the Fields et al. reference still does not lead to the present invention as claimed in amended independent claims 1 and 5. Dependent claims 2-4 contain the same limitations as amended independent 1 and are allowable for the same reasons.

Applicant has made a bona fide effort to remove informalities from the specification, and to properly amend the claims. As such, it is believed the present application is in a condition for allowance. Accordingly, a Notice to that effect is most respectfully requested.

Dated: June 9, 2003

Respectfully submitted,



Arthur K. Samora, Reg. No. 43079
Department of the Army
CECOM Intellectual Property Division
AMSEL-LG-C-NVESD
10225 Burbeck Road
Fort Belvoir, VA 22060-5806
(703) 704-2227

EXHIBIT A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: C. Ward Trussel, Jr.	)	
Serial No.: 09/879,928	)	Examiner Matthew E. Warren
Filed: June 14, 2001	)	Art Unit 2815
Title: DIODE ARRAY END PUMPED SLAB	)	
LASER	)	

COMPLETE LISTING OF ALL CLAIMS PER 37 C.F.R. SEC. 1.121(PROPOSED)

1. (currently amended) A diode array end pumped slab laser comprising:

a laser diode having at least one diode bar for providing laser pump light in a vertical and horizontal direction to the optical axis;

a first cylindrical lens for collimating said laser pump light in said vertical direction on said optical axis after said laser diode bar;

a second cylindrical lens on said optical axis perpendicular to and after said first cylindrical lens for collecting laser pump light output from said first cylindrical lens and focusing onto a laser slab as focused laser pump light;

a laser cavity on said optical axis after said second cylindrical lens comprising a laser slab of solid state crystal with a length and polished input and output ~~sides~~ ends, and further having rough ground top and bottom surfaces and polished side surfaces, ~~and,~~ the slab accepting as input said focused laser pump light at said polished input ~~side~~ end with unabsorbed pump light reflected within the laser slab off the polished side surfaces and outputting from said polished output ~~side~~ end absorbed laser energy, whereby laser pump light remains collimated perpendicular throughout said laser slab and said pump light further includes laser mode overlap for all of said laser slab length.

2. (currently amended)The diode array end pump slab laser of claim 1 wherein said laser cavity further includes a Q-switch having input and output ends on the optical axis, with dichroic coatings at said input and ~~out~~ output ends, said Q-switch for producing peak power pulses.

3. (original) The diode array end pumped slab laser of claim 1 wherein said laser cavity further includes a non-linear crystal to produce additional wavelengths.

4. (currently amended) The diode array end pumped slab laser of claim 1 wherein there is ~~futher~~ further included a non-linear crystal after said laser cavity on the optical axis for produce additional wavelengths.

5. (currently amended) A diode array end pumped slab laser technique comprising the steps of:

Cont'd A1

generating laser pump light in a vertical and horizontal direction to the optical axis;

collimating said laser pump light in said vertical direction with a first cylindrical lens;

~~collecting laser pump light output from said first cylindrical lens and focusing onto a laser slab as focused laser pump light;~~

~~accepting as input said focused laser pump into a laser cavity including at least a laser crystal having an input and output side, where unabsorbed pump light is reflected within the laser crystal and outputting from said output said absorbed laser energy, whereby laser pump light remains collimated perpendicular throughout said laser crystal and said pump light further includes laser mode overlap for all of said laser crystal length~~

providing a rectangular laser slab having a length, an input end, an output end, a top surface, a bottom surface and opposing side surfaces;

polishing said input end, said output end and said side surfaces;

receiving said laser pump light from said first cylindrical lens with a second cylindrical lens positioned between said first cylindrical lens and said laser slab; and,

focusing said laser pump light onto said input end with said second lens so that said

(cont'd A-1) laser pump light remains collimated perpendicular throughout said slab, and further so that said laser pump light reflects off said side surfaces throughout said length of said laser slab.

Dated: June 9, 2003

Respectfully submitted,

Arthur K. Samora, Reg. No. 43,079
Department of the Army
CECOM Intellectual Property Division
AMSEL-LG-C-NVESD
10225 Burbeck Road
Fort Belvoir, VA 22060-5806
(703) 704-2227